



“THE SKYCHASER”

South Dakota Wing Electronic Newsletter for July 2018

Official Auxiliary of the U.S. Air Force - Citizens Serving Communities: Above and Beyond

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WING TIPS



- END OF ENCAMPMENT:** On 1 July the 2018 Joint Dakota Cadet Leadership encampment (JDCLE) which began on 23 June, came to an end. This year JDCLE was held at Camp Grafton, the North Dakota Army National Guard installation near Devils Lake. The annual Joint Dakota encampment alternates between Camp Grafton in even numbered years and Camp Rapid, SD in odd numbered years.
- PHILIP AE WEEKEND:** From 13-15 July, SDWG held its annual Aerospace Education Weekend, this time in Philip, SD, home of the former Philip Composite Squadron whose facilities were still there for our use. A huge thanks to Lee Vaughn and his crew for transforming the Philip CAP building from a storage facility to fine accommodations which was the hub of the weekend's activity. Powered aircraft orientation rides, glider orientation rides, model rockets, drones and flight simulators were the highlights of the activity. There were around 45 people representing all six squadrons present at various times including 22 cadets and 23 senior members. Nineteen cadets were given 26 glider orientation rides. Capt. Patrick Nowlin and Lt. Col. Craig Goodrich piloted the Cessna-182 tow plane on Friday and Saturday respectively. Not only was it hot on Saturday the 14th - 94 degrees but operations had to be shut due to wind for a few hours mid-day. C/Capt Kyle Clement lead the rocket launch activities. Cadets launched rockets they built, several exceeding 300' in altitude. Clement then launched a couple of "custom" rockets, one of which exceeded 700' in altitude to everyone's thrill. Some of us can still see the image of Kyle running to try and get to the 48" rocket as it slowly descended by parachute. Some 50 rockets were shot off. Seven cadets earned their CAP Model Rocketry Badge while 14 others advanced in the Model Rocketry program. Several cadets were treated to the use of an aircraft simulator provided and assisted by senior member John Spangler. Community members came out to watch and enjoyed a free hot dog and lemonade lunch thanks to Col. and Capt. Small who purchased the food and prepared the meals. A Philip town councilman came by to visit.



TOP: FORMER PHILIP COMPOSITE SQUADRON BUILDING, SITE OF THE 2018 PHILIP AE WEEKEND

MIDDLE LEFT: THE NEW SDWG GLIDER SOARS INTO THE AIR ON A CADET O-RIDE

MIDDLE RIGHT: LT. COL. BUCK DEWEESE (REAR SEAT) PREPARES TO GIVE PIERRE'S C/SSGT ALEC CROWSER A GLIDER O-RIDE

BOTTOM LEFT: CADETS WORK TO ASSEMBLE THEIR MODEL ROCKETS

BOTTOM RIGHT: AN ALPHA-III MODEL ROCKET BLASTS OFF

- **KADOKA STEM VISIT:** Col. Mike Beason and Col. David Small flew from Rapid City to the grass strip at Kadoka on 3 July where they met up with Capt. Marsha Sumpter of the Pierre Composite Squadron. She had arranged for 22 young people from the Kadoka Area School's summer community program to be on hand to be introduced to a SDWG Cessna-172 aircraft. Four teachers also came along. The CAP officers talked with the kids about flying, how an airplane works and indirectly exposed them to science, technology, engineering and mathematics (STEM). They also talked to them about the Civil Air Patrol. This visit was part of a program to bring Aerospace Education to remote areas in our state. SDWG and the South Dakota Discovery Center in Pierre have teamed up to offer a fun, new STEM program for rural communities in central South Dakota.



LEFT: THE SPARSE FACILITIES AT THE KADOKA AIRSTRIP



RIGHT: COL. MIKE BEASON EXPLAINS AN ASPECT OF FLIGHT TO STUDENTS AND TEACHERS

- **SDWG CAP VEHICLE DAMAGED IN HAILSTORM:** Nine tornadoes left a trail of damage across southeast Montana and northwest South Dakota on 12 July. Weather Service reports indicate there were five tornadoes in Harding County, SD, and four in Carter County, MT. Col. Small reports that his property got hammered by extreme hail. In addition to the damage to his property, the CAP vehicle parked there had to be towed off for an estimate for dents, broken windows, etc.



- **DID YOU KNOW #1:** Just a week before Pearl Harbor was attacked in 1941, Bader Field, adjacent to Atlantic City, New Jersey, became the first location in the nation to host a Civil Air Patrol flight. The facility first opened in 1910 and aviation pioneer Glenn Curtiss began passenger service from the field in 1911. Bader Field was not the first airstrip, airfield, or aerodrome; those terms were used in World War I. The term “airport” to describe Bader Field was first used in a newspaper article in 1919. Bader Field, the first municipal airport in the U.S. was also the first in the nation with facilities for both land-based aircraft and seaplanes. After failed attempts at revival over the years the airport, forlorn and in disrepair, finally closed in September 2006.

- **DID YOU KNOW #2:** On 11 July a General Atomics Aeronautical Systems, Inc., MQ-9B “SkyGuardian” completed the first-ever trans-Atlantic flight for a medium-altitude, long-endurance remotely piloted aircraft as it landed at RAF Fairford. The aircraft, which took off from Grand Forks, N.D., where its pilots were based throughout the flight, flew for 24-hours and two minutes.





• **AERIAL WILDLIFE SURVEYS:** SDWG flew seven aerial surveys of terrestrial wildlife over six days in July in support of the state's Department of Game, Fish & Parks (GF&P) and South Dakota State University (SDSU). Both organizations have continually ongoing research projects surveying mountain lions, bobcats, swift foxes, white-tailed deer, mule deer, elk, bighorn sheep, and mountain goats. The result was 22.9 hours flying over western South Dakota and the Black Hills and 4.5 hours flying over eastern South Dakota for a total of 27.4 flight hours. CAP pilots were: Lt. Col. Gary Hewett, five sorties; and Col. Mike Beason, one sortie; and Capt. Neil Schmid, one sortie. Depending whom the sortie supported the pilot was accompanied by a representative from SDSU or from GF&P. The photo shows a wild bobcat, one of the critters tracked by GF&P and SDSU researchers.

STAFF NOTES



WING COMMANDER

Col. David Small Jr., CAP

• **NEW WING IG:** Lt. Col. Gary King has agreed to replace Lt. Col. Shelly Metzger as the Wing Inspector General. Shelly has moved to Arizona but will stay on as a wing member and assistant IG. We will miss Shelly's presence but welcome Gary's involvement at the wing level.

• **DEPLOYED:** SDWG member Lt. Col. Nancy McKenney, a shelter manager for the American Red Cross, deployed to Watford, ND from 10-13 July to provide support and assistance in the aftermath of a tornado that ripped through a camper park for migrant workers. Nancy reports, "Was a sad one as one person fatality, a six day old baby. It is an oil town and it was a park full of campers and that was the only place the tornado hit." Nancy is safely back home and we thank her for her service.



WING VICE COMMANDER

Lt. Col. Buck DeWeese, CAP

• **GLIDER OPERATIONS:** July was an incredibly productive month for the Glider Program and Aerospace Education in general. We launched our L-23 Super Blanik glider (FAA Registry N431BA) 96 times. The breakdown was four requalifications for Lt. Col. Gary Hewett and Lt. Col. Albert Trumble, nine initial qualifications and a Form-5 checkride for myself, 24 cadet orientation rides in Philip, 58 Cadet Flight Academy sorties in Minnesota and one sortie towing the glider to Philip for AE Weekend. That is almost 50% of the 200 sorties per year mandated by National Headquarters. At least 100 must be cadet orientation rides, so we are well on our way with only 18 remaining on the cadet side. We can accomplish that in one good day. We hope to get at least 50 more cadet orientation rides within SDWG before the snow flies.

2. Towing the glider is NOT an easy task, either by air or by ground. I logged 1.6 hours on the rope going to Phillip. The ground tow was even more exciting with cross winds, semi-truck bow waves, and a trailer with an

aircraft that acts like a sail boat. We need some anti-sway support on the hitch or a third axle mounted behind the first two. Lt. Col. Goodrich and Capt. Tim Modde will both agree.

3. We had tow support from Capt. Patrick Nowlin from Spearfish to Philip as well as 11 tows in Philip. Lt. Col. Goodrich provided 13 more before we cancelled for the day due to severe weather moving in. The gusty winds that night prompted me to evacuate all personnel from the tents into the Squadron building or my camper for safety. Flying for Sunday was cancelled as well.

4. With flying cancelled on Sunday I went to Mankato, MN for the National Glider Academy. The actual airport was changed to New Ulm which deconflicted us with the Powered Flight Academy occurring simultaneously in Mankato. With three gliders and four tow planes operating, we were very busy. I took copious notes on the operation the three days I was there and even got in about 25 tows myself. On Wednesday afternoon I drove the van to Minneapolis-St Paul airport to fly back to Rapid City for my family reunion. Thursday was a no-fly day in New Ulm anyway due to weather. Lt. Col. Goodrich then picked up the van Friday night to return to New Ulm. Saturday morning he hooked onto the glider trailer to return to Rapid City. It was quite an orchestration of men and materials, but it worked. Since the glider suffered an altimeter failure along the way, it still sits in Rapid City in the trailer awaiting repair

5. Probably the biggest lesson learned is the tremendous amount of paperwork required to operate gliders under the current version of WMIRS and Glider Regulations. We are all trying to simplify that process.

6. We did not accomplish 100% of our goals, but we were 100% safe and everyone had a valuable Aerospace Education experience. I don't have final numbers for food, fuel and support costs, but we did put 14.9 hours on the glider (it takes a lot of 0.1 and 0.2 sorties) and over 20 hours on the airplane.



WING DIRECTOR OF CADET PROGRAMS

Lt. Col. Linda Buechler, CAP

- **NCR HONOR ACADEMY**: The North Central Region (NCR) Cadet Honor Academy will be 19-21 October 2018 at the SD Army National Guard Regional Training Institute in Sioux Falls. Registration is from 1000-1200, Friday, 19 October 2018 with lunch at noon and classes beginning at 1300 on Friday. Registration is on Eventbrite - North Central Region Cadet Honor Academy. Cost is \$35.00 + \$2.79 for Eventbrite. For those with financial difficulties there is a scholarship fund through the SDWG Cadet Program budget. Send a request for and reason for request to linda.buechler@sdcap.us. A scholarship committee has been formed to award the scholarships. Cadet drill instructors are needed and resume may also be sent to linda.buechler@sdcap.us. If you have questions, contact Lt. Col. Linda Buechler (605)212-7032 or linda.buechler@sdcap.us

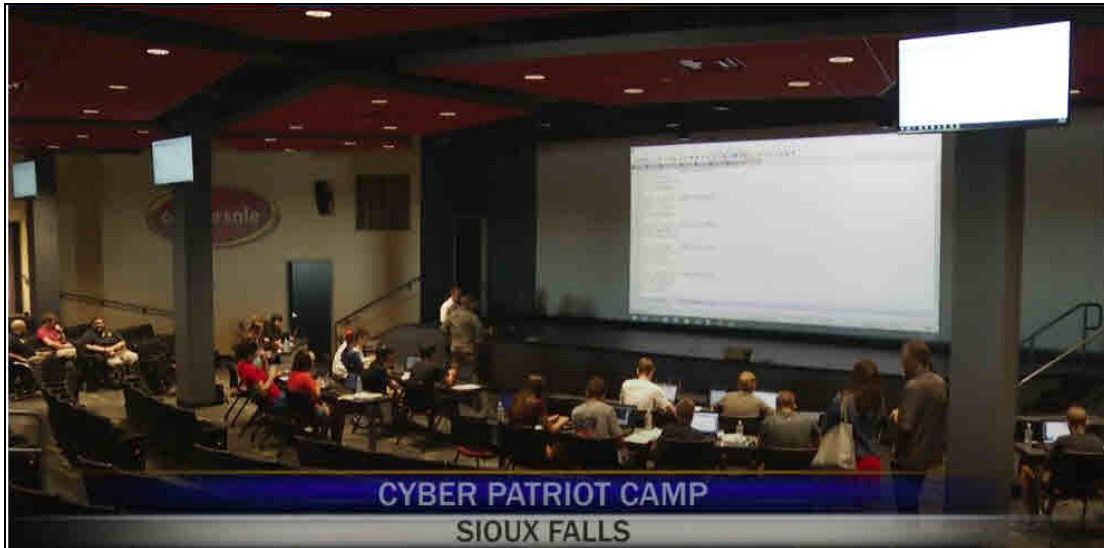
SQUADRON HIGHLIGHTS

BIG SIOUX COMPOSITE SQUADRON (SD-058 – BROOKINGS)

(Item submitted by 1st Lt. Joshua Klosterman)

- **CYBERSECURITY**: On 16 July, 9th through 12th grade participants began a week-long journey into the world of cybersecurity. Held at the Career and Technical Education (CTE) Center in Sioux Falls, the five-day

camp focused on teaching high-school students the basics of cyber and internet security. This camp is part of the annual CyberPatriot program, a national cyber education initiative aimed at equipping today's youth with the skills needed to defend our nation in an increasingly dangerous world. Students were able to experience hands-on training utilizing two of the most common operating systems: Microsoft Windows and Linux. The training included preparation to compete in the official CyberPatriot Competition, which puts teams of high school and middle school students in the position of newly hired IT professionals tasked with managing the network of a small company. Students in this competition compete in a variety of areas to demonstrate their cybersecurity skills and knowledge, with the top teams earning a trip to the National Finals in Maryland. Next year, there will be two CyberPatriot camps held in Sioux Falls: An Advanced Camp for students that have demonstrated proficiency, and a Beginners Camp. 1st Lt. Joshua Klosterman was one of the principal instructors for this activity. He was formerly Cadet Lieutenant Colonel Klosterman, was the 2017 CAP National Cadet of the Year, and has previously competed in the annual CyberPatriot competitions as a member of Team Big Sioux.



CRAZY HORSE COMPOSITE SQUADRON (SD-068 – CUSTER)

(Items and photos submitted by Capt. Bierwirth)

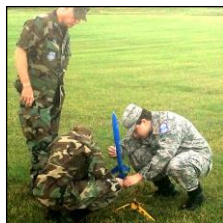
- **INDEPENDENCE DAY PARADE:** On July 4th the Crazy Horse Composite Squadron lead the 4th of July Parade in Custer, assisted in raising the American Flag, helped out parking attendees for the military vehicle show and had a booth set up to promote CAP. It was a busy day. The Color Guard consisted of: (l-r) C/SrA Jordan Weiland, C/CMSgt Anthony Dillon, C/A1C Preston Drew and C/SrA Amelia Weiland.



- **NEW CADETS:** We've grown by three cadets - Noah Hovland, Patience Hovland and Adalida Hovland. We are pleased that you decided to join Civil Air Patrol and proud to have you in our squadron!



- **ENCAMPMENT AWARDS:** C/A1C Preston Drew attended the Joint Dakota Encampment at Camp Grafton, Devils Lake North Dakota from 23 June to 1 July. While there he earned three individual awards: Honor Cadet Delta Flight, 321st Training Squadron Honor Cadet and Academic Excellence Award.



- **MODEL ROCKETRY:** Squadron members worked towards completing requirements for the Civil Air Patrol Model Rocketry Badge at the recent Aerospace Education Weekend held at Philip, SD. They are (l-r): Capt. Don Weiland, C/Amn Kyleeann Dvorak and C/A1C Alexander Heinrich. In the photo Dvorak and Heinrich are attaching their two-stage Saturn model rocket to the launch rail in preparation for blast off.

LOOKOUT MOUNTAIN COMPOSITE SQUADRON (SD-063 – SPEARFISH)

(Item and photo submitted by Col. Small)

- **CHANGE OF COMMAND:** There was a change of command at Lookout Mountain Composite Squadron on 12 July. Maj. Bill Collister relinquished command after four years of successful leadership. Lt. Col. Jim Hopewell accepted command during the brief ceremony held at the squadron's headquarters presided over by Wing Commander Col. David Small. The guidon carrier for the ceremony was Lt. Col. Hopewell's grandson C/2d Lt Ryan Harris, the squadron's cadet commander, who will be departing for college shortly.



PIERRE COMPOSITE SQUADRON (SD-038 – PIERRE)

(Items and photos submitted by 2d Lt. Rezac and Lt. Col. Gatje)

- **INDEPENDENCE DAY:** Nine senior members and four cadet members of the Pierre Squadron joined several thousand of their closest friends in celebrating the Fourth of July with a parade through downtown Fort Pierre. The largest area parade each year winds its way through Fort Pierre bringing together cowboys and their horses, fire departments and their trucks, commercial floats, politicians and CAP, among others. This year's parade was huge with the lineup beginning in Fort Pierre and then moving through the city. CAP had two vehicles, a flatbed with a vintage CAP "aircraft" and a number of CAP seniors and cadets – some handing out candy from their walking positions. In addition, some handed out CAP literature as a portion of the Squadron's recruiting campaign. We have had several inquiries about membership from the flyers we handed out.

Following the parade the celebration concluded with a huge outdoor rodeo and fireworks display as has been traditionally done. It was a privilege to be a part of the oldest continuous 4th of July parade in the state.



- **FUND RAISER:** The squadron held a very successful fundraiser at the Pizza Ranch in Fort Pierre on 3



July. Most members of the squadron, both senior and cadet, attended and helped greet customers and do clean-up work as part of our responsibilities. The squadron uses this event as both a fund-raiser and a recruiting event, handing out CAP materials and speaking to attendees to raise awareness of CAP and its missions. A large number of people attended. It was so well attended that the restaurant ran out of food and had to close a bit early for the evening. We thoroughly enjoy working with them, and have already booked the same day for next year.

- **SPACE CAMP:** Pierre members Lt. Col. Myra Christensen and 1st Lt. Ruth Carley assisted staff members from Pierre's Discovery Center teaching Aerospace Education activities during their Space Camp. The students participated in both the morning and afternoon sessions. This is the second year the Pierre Composite Squadron members helped with their Space Camp Week.

- **PLANETARIUM:** The stars aligned for the squadron on 31 July. During the extra fifth monthly meeting, the members of the squadron enjoyed a special treat: 2nd Lt. Rhea Waldman arranged a private, after-hours star



show in the portable planetarium at the South Dakota Discovery Center. Cadets and senior members heard facts and myths about the North Star and the circumpolar constellations, visited Saturn and its moons, explored deep space objects like the Horse Head Nebula and Einstein's Cross and learned about the evolution of stars and galaxies. It was an extraordinarily interesting, informative and enjoyable experience. In the photo the members prepare to enter the inflatable planetarium as Lt. Waldman explains some of the features. No shoes are permitted in the dome due to its fabric construction.

RUSHMORE COMPOSITE SQUADRON (SD-031 – RAPID CITY)

(Items and photos submitted by Capt. Mike Johnson)

- **AE OUTREACH:** During the last week of July SM John Spangler and SM Kelsey McDaniel provided an Aerospace Education session to a group of Air Force ROTC cadets. The cadets came to fly, and fly they did on the outstanding flight simulator systems that SM Spangler has set up at the squadron. The cadets had a great time and it was the first flying experience for many of them.



SHIUX FALLS COMPOSITE SQUADRON (SD-050 – SHIUX FALLS)

(Items and photos submitted by Lt. Col. Epp, Lt. Col. Lair and Maj. West)



- **INDEPENDENCE DAY PARADE:** Squadron members marched in front of trusty old CAP-25, a/k/a the "Ghostbusters" van, in the Sioux Falls Mayor's 4th of July Parade and Picnic. Ghostbusters delighted parade goers with its loud air horn, yelp, stinger, and other emergency sounds. Participants were C/2nd Lt Julia Lair, C/AB Hannah Decker, C/CMSgt Jacob Roth and C/CMSgt Chris Schuppan, and Senior Members Lt. Col. Todd Epp, 1st Lt. Donna Osment-Epp, 2nd Lt. Dale Palmer, 1st Lt. Melanie Schuppan, and 2nd Lt. Travis Robinson.

- **PLANE WASH:** The CAP planes on the eastern side of the state have been busy flying and we all know what that means, dirty planes. At the end of June Capt. Matt Meert, Capt. Brandon West, and Maj. Karla West spent a long night thoroughly cleaning Cessna-182, tail# N933CP, inside and out. On 7 July a crew got together to give the squadron's Cessna-172, tail# N98776, a meticulous cleaning. In the left photo (left to right) are: C/AB Keon Den Hoed, C/AB Mesha Horsa, C/Capt Kyle Clement, C/AB Austin Den Hoed, C/2dLt Sydnie Cloutier and C/2dLt Julia Lair. This merry crew of scrubbers was supervised by Lt. Col. Greg Lair. Now both planes based out of Sioux Falls are shiny and ready to fly.





- **NCSA NBB**: C/Capt. Kyle Clement and C/2d Lt Jaden Roblewsky attended the National Cadet Special Activity “National Blue Beret” (NBB) at the Experimental Aircraft Association’s massive airshow “AirVenture 2018” held from 23-29 July at Oshkosh, WI. In all, 150 cadets and 55 senior members pitched in during the event, which draws more than 550,000 people and over 20,000 aircraft to Wittman Field. The CAP members support the event by marshalling aircraft on the flight line, tracking and finding overdue aircraft and interacting with the public. NBB’ers also support the CAP National Recruiting booth.

This is the second time Clement has attended this major event. He was on the Cadet Staff as a Flight Leader. Participants at this prestigious NCSA earn the right to wear the coveted blue beret with Saint Alban’s pin as the official headgear with their CAP uniforms.

- **MINI-SAREX**: On 28 July the squadron held a mini-SAREX. Around 25 members of SDWG took part. Five scenarios were played that involved ground teams and aircraft; a missing child, three ELT searches and two photo survey missions. The weather cooperated and a significant amount of training was accomplished. A special thanks to the Sioux Falls Salvation Army for providing meal service for the participants. Sioux Falls television station KDLT sent a reporter who shot some video and interviewed Lt. Col. Epp and C/2nd Lt Sydnie Cloutier. The footage aired on the 6pm and 10pm broadcasts and showed CAP in a very positive light.



LEFT: OPERATIONS BRIEFING

CENTER: THE GROUND SEARCH TEAM SUCCESSFULLY LOCATED THE TARGET IN THE MISSING CHILD SCENARIO

RIGHT: MAJ. KARLA WEST, CAPT. JOE OYE AND C/MSGT JACOB ROTH CONDUCTING AN AIRBORNE ELT SEARCH

★ ★ PROMOTIONS ★ ★

Senior Member Promotions



Congratulations to Nicholas Gengler of Beresford, Justin Johnson of Marion, and Jeremy Langrock of Sioux Falls who have been promoted to the rank of Lieutenant Colonel! All three are members of the Sioux Falls Composite Squadron and all three serve on the Wing Staff.



Congratulations to Jerry Gabert of Sioux Falls on his promotion to the rank of Major!

Cadet Officer Promotions



Congratulations to Jaden Petersen of Brookings, a member of the Big Sioux Composite Squadron on promotion to the rank of Cadet Captain and receipt of the milestone Amelia Earhart Award!



Congratulations to Austin King of Volga, a member of Big Sioux Composite Squadron on promotion to the rank of Cadet Second Lieutenant and receipt of the milestone Billy Mitchell Award!



Cadet Noncommissioned Officer Promotions



Congratulations to Kaleb Sarchet of Valley Springs, a member of Sioux Falls Composite Squadron, on his promotion to the rank of Cadet Senior Master Sergeant and receipt of the General Jimmy Doolittle Award!



Congratulations to Alec Crowser of Philip, a member of Pierre Composite Squadron, to Gabriel Eager of Sioux Falls, a member of Sioux Falls Composite Squadron, and to Brady Hedrick of Sioux Falls, a member of Big Sioux Composite Squadron, on promotion to Cadet Staff Sergeant and receipt of the Wright Brothers Award!



Cadet Airman Promotions



Congratulations to Austin Den Hoed and Keon Den Hoed, both of Boyden Iowa, both members of the Sioux Falls Composite Squadron, and to Micah Byrd of Spearfish, a member of the Lookout Mountain Composite Squadron, on their promotion to Cadet Airman and receipt of the Gen. J.F. Curry Award!



★ ★ **KUDOS** ★ ★



(NEW) Congratulations to Capt. Donald Weiland, commander of the Crazy Horse Composite Squadron in Custer, who in June attained Technician level in the technical specialty Cadet Programs and, in July, completed Level 2 of the Senior Member Professional Development Program and in recognition thereof received the Benjamin Davis award!



Congratulations to SM Matthew Tennant of Oneida, a member of the Pierre Composite Squadron for passing his initial CAP Form 5 checkride in a Cessna-172!



Congratulations to 2d Lt. Denise Clement of the Sioux Falls Composite Squadron who received the only Commanders Commendation for a Senior Member as outstanding Medical Officer for the 2018 Joint Dakota Cadet Leadership Encampment (JDCLE) at Camp Grafton, ND. She made herself



available day and night for all the cadets during this event and made several trips to clinics and doctor's offices showing great professionalism and compassion in her actions while caring for the numerous ailments, illnesses and emotional issues that arose during the ten-day event that involved almost 100 cadets. With little time to prepare for this assignment she assembled a well maintained medical kit that was used throughout the week---much of it at her own expense. Lt. Clement was always seen with a smile on her face and a willingness to help. In the photo she is receiving her award from Capt. Travis Partin, commander of the 2018 JDCLE.



Congratulations to C/2d Lt Branden Spence, the Rushmore Composite Squadron's Cadet Deputy Commander, who, on 12 June, earned his Private Pilot's License! His family and his squadron-mates are as proud of him as can be. There are not words enough to thank Lt. Col. Craig Goodrich for being his rock, his mentor, his instructor and friend.



Congratulations to C/AB Keon Den Hoed of Sioux Falls Composite Squadron, and to C/A1C Preston Drew, C/Amn Domenic Dvorak, C/Amn KyleeAnn Dvorak, C/A1C Alexander Heinrich, C/SrA Amelia Weiland and C/SrA Jordan Weiland, all of Crazy Horse Composite Squadron on completion of CAP's Model Rocketry Program and award of the Civil Air Patrol Model Rocketry Badge!



Congratulations to Maj. Jerry Gabert of Sioux Falls who completed the Aerospace Education Program for Senior Members and in recognition thereof has received the Brigadier General Charles E. "Chuck" Yeager Aerospace Education Achievement Award certificate and ribbon!



More congratulations to Maj. Jerry Gabert of Sioux Falls who completed the requirements for Level III, Management, of the Senior Member Professional Development Program. In recognition thereof he has been presented with the Grover Loening Award certificate and ribbon!



Congratulations to Lt. Col. Nick Gengler of Beresford, Justin Johnson of Marion and Lt. Col. Jeremy Langrock of Sioux Falls who completed the requirements for Level IV, Command and Staff, of the Senior Member Professional Development Program. In recognition thereof they received the Paul Garber Award certificate and ribbon!



MARS ROVER CAUGHT IN HUGE DUST STORM



NASA's Mars Opportunity Rover has defied all odds by celebrating its 15-year anniversary on 7 July. But it is unclear how much longer it will last as it is caught in a gigantic dust storm enveloping the red planet and

blotting out the sun. Opportunity was initially meant to be on a 90-day mission, but 15-years later it is still exploring Mars and sending back amazing images and information, the most critical of which was evidence that at one point, part of Mars had water for an extended period meaning the planet had the right conditions to support microbial life. Opportunity, which is solar powered, has been in hibernation mode for weeks in a giant dust storm swirling on Mars that already covers one-quarter of the planet. It could be weeks or even months until the sky clears enough for sunlight to reach the surface and recharge Opportunity's batteries. For now, Mars' oldest working rover is stuck in the middle of the raging storm, in round-the-clock darkness. Fortunately, there's no chance of Opportunity being buried in dust. Even in the worst of storms, only a layer of fine dust is left behind. Managers said the main concern is that dust could temporarily cover its optical instruments. The rover's batteries are likely so low that only a clock is still working, to wake the spacecraft for periodic power-level checks. If the clock also goes offline, then the rover won't know what time it is when it comes back on and could send back signals at any time. On the plus side, Martian summertime is approaching and that should keep temperatures up at night and prevent the batteries and other parts from freezing. Besides electrical heaters, Opportunity is equipped with eight tiny plutonium-powered heaters. Opportunity was in remarkably good health going into the storm with only an arthritic joint in its robotic arm. "Keep in mind, we're talking about a rover that's been working on Mars for 15 years and designed just for 90 days," said Jim Watzin, director of NASA's Mars exploration program. "It just doesn't get any better than that."

